## ABSTRACT OF THE DISCLOSURE

A method and system for an optimal one-shot estimate of phase and frequency for timing acquisition employ a maximum a posteriori (MAP) formulation to calculate a cost function that is a function of an estimated frequency and an estimated phase. A plurality of cost functions are calculated each using a different estimated frequency and a different estimated phase, and the minimum value cost function is selected. The estimated frequency and estimated phase values are selected from a range of frequency and phase values. The minimum value cost function corresponds to the optimum frequency and the optimum phase.